

the Editor's Bookshelf



TEACHING MACHINES OFFER both a threat and a promise to American education. The promise is that they will make possible faster and more effective learning and will enable each student to progress at his own best rate without being held back or pushed ahead too fast by others in his class. The threat grows out of the fact that there are enormous profits to be made in producing and selling the machines and the programs used in them and that the urge for profits will cause manufacturers and publishers to oversell them with exaggerated claims before good programs have been developed.

It has been estimated that more than 100 firms are now engaged in making machines and programs. Some have recruited able professional staffs and plan to devote a considerable amount of time and money to the production of sound programs before they are put on the market. Others are rushing into production with untested programs and offering them directly to parents with hard-sell advertising and promises of results that no professional would make for his services.

There is nothing terribly complicated about the teaching machine itself, but the production of the program for learning is not a job for amateurs and unfortunately there are, as yet, very few professionals available—the field is too new. At the very minimum the team assigned to the production of a program for the teaching of a course such as algebra should include a mathematician who has a sophisticated knowledge of algebra and a psychologist who has a thorough grasp of the learning theory which is basic to programming. Writing the program will require many months of hard work, and the program should not be put on the market until it has been thoroughly tested on children and evaluated by an independent professional group.

For those who want to know more about the complexities of programmed instruction, two new books are available. **"The Learning Process and Programmed Instruction,"** by Edward J. Green, (Holt, Rinehart and Winston, 228 pp. \$4.00) is a psychologist's sophisticated analysis of the basic conditioning process and of the assumptions, definitions, and techniques that underlie programming. Green's conclusion is cautious, "Only

one thing is certain. No matter what the potentialities of this technique may be, it is a tool. It will be only as good or as bad as the uses to which it is put. All the argument favoring programmed instruction and all the polemics damning it are but breezes in the trees."

Green's interpretation of programmed learning relies heavily on the behavioristic theories of Professor Skinner of Harvard, and readers without a background in psychology will find his book difficult.

A more popular explanation of programming is available in Benjamin Fine's **"Teaching Machines"** (Sterling Publishing Co., 176 pp., \$3.95). Mr. Fine does not assume any previous knowledge of the subject on the part of his readers but describes the machines and the programs and reports on his visits to schools using them. He sent questionnaires to 300 school superintendents and state commissioners of education and reports that nearly all said that they were experimenting with teaching machines. Fine concludes, "Everybody can learn with teaching machines—students of all ages, adults, factory workers, military personnel."

PRESIDENT LOGAN WILSON of the American Council on Education has described the American university as "an agglomeration of entities connected only by a common plumbing system." The entities include a wide variety of independent departments, a covey of deans, a student body with its many fraternities and sororities and other "activities," a library, numerous laboratories, student personnel services, health services, a bureau of alumni affairs, a football team, a board of trustees that wants more power, and a faculty that wants it to have less.

Inevitably such an agglomeration becomes a bureaucracy and one of the principle characteristics of a bureaucracy is a hierarchy with its lines of authority. But professors do not like a hierarchy that includes administrators, and neither professors nor students have any great fondness for authority. The result is that the university president who stands in the middle has an extraordinarily difficult job.

The latest of the many college presidents to comment on these difficulties is John Millett, president of Miami University (Ohio) who is also president of the State Universities Association. In his book **"The Academic Community: An Essay On Organization"** (McGraw-Hill, 265 pp., \$5.95), Dr. Millett presents an informed analysis of the forces that control a modern American university, including the faculty, students, alumni, board of trustees, and administration. Some of his comments appear below. P.W.

From "The Academic Community," by John D. Millett

BOARDS OF TRUSTEES:

"In a sense it might be said that the board of trustees is the keeper of the social conscience, the protector of the public interest in higher education."

FACULTY:

"It must not be thought . . . that the individual faculty member within his classroom is subject to no limit upon his authority. The instructor is continually being evaluated by his students. And this evaluation over a period of time may be surprisingly accurate."

STUDENTS:

"The student body of an academic community wields power. . . . Indeed, it is probable that students themselves have little realization of the power which they do and can exercise. Many scholars and administrators take heart at this lack of understanding. An extremely militant student body can express its position in awesome and even dangerous proportions, as has been noted on occasion in universities in other countries."

ALUMNI:

"Indirectly and directly, alumni exercise a real influence upon the behavior of higher education. It is an influence which has both its praiseworthy and questionable aspects."

POWER:

"The academic community abhors absolute power. It is committed to freedom through a sharing of power."

Reluctant Lovers

"The Federal Interest in Higher Education," by Homer D. Babbidge, Jr. and Robert M. Rosenzweig (McGraw-Hill Book Co., 214 pp., \$5.95.)

By DAVID D. HENRY, *President of the University of Illinois.*

HIGHER education and the federal government, a topic of prime importance to the American people as individuals and to the nation, unfortunately has a limited bibliography of first-rate commentary.

"The Federal Interest in Higher Education," by Homer Babbidge and Robert Rosenzweig, immediately takes a place at the top of that list, useful both to the new and the experienced observer, and to the less-than-expert but concerned and thoughtful citizen. It should contribute significantly to a much-needed clarification of the issues of federal participation in the expenditures on higher education.

The presentation has the virtues of an academic analysis — objectivity, sound structure, perspective. It also reflects the sense of immediate reality and practical wisdom which come from involvement, for the authors have had first-hand experience in Washington as well as in universities.

The material is simply and coherently organized. Each division flows smoothly into the next: Historic Federal Interest in Higher Education; the Posture of Government; the Posture of Higher Education; the Issues; and the Future Dimly Seen. The comprehensive notes are useful without detracting from readability.

This clean outline should not mislead one as to the depth or scope of the book. There is nothing superficial about this relatively brief discourse. Penetrating analysis rather than extensive description is its key characteristic, yet the treatment is complete in covering the main concerns about the relationships between the federal government and higher education.

The discussion is, in the main, pository and point by point, not aggressively argumentative; yet the authors clearly pursue a thesis:

It is no longer appropriate to argue whether or not there is a Federal

interest that should be expressed in the form of assistance. The questions that remain have to do with the extent and nature of the interest and the amount and kind of assistance.

Most readers will find the book informative and interesting, whether or not they agree with its findings. The style is lucid. Many passages are insightful and cogent. For example, in "The Issues," the authors point out that considerations other than federal control are at stake:

If the threat of an unwelcome intrusion upon educational matters must be guarded against, there is another kind of threat which is less obvious but perhaps even more imminent. It is the danger that comes from too much extemporizing; from too great a reliance on stopgaps and crash programs; and in general from too high a regard for immediately visible needs and measurable results and too little concern for the long-term health of the educational system.

There is an increasing awareness both on the part of those who invite and those who resist federal involvement in higher education that such involvement is bound to increase. Although this awareness, according to the authors, has come with some apprehension on both sides, "a mutual self-interest, to the benefit of society at large, has been moving these reluctant lovers into a close and continuing embrace." The authors continue:

Neither party, however, is yet willing to admit publicly that the relationship is more than a passing affair. As a result, the government, on its part, has barely begun to consider seriously the kind of organization needed to deal effectively with higher education on a systematic, long-range basis.

The book is flavored throughout with delightfully expressed insights into political action and institutional behavior in our democracy. Consider this one:

In a very real sense, an "issue" in public affairs is whatever people think is an issue. Regardless of how inappropriate or irrelevant a given factor may seem to be, if it is sufficiently important to a large enough number of people to influence their behavior, then it must be dealt with. Maybe it

ought not to be important, and maybe the fact that it is important is proof of public irrationality, but history is strewn with the dashed hopes of those who were so taken with the world as it ought to have been that they neglected the world as it was.

Admitting that the American government "is not a tidy one" in its operations, and that "the forces which cause a lack of coherence are strong and sustained," the book is premised on Jefferson's assertion that education is "among the articles of public care" and that a way will be found to shape the evolving partnership between the government and higher education so that "this care is discharged in ways that will do credit to all those who share it and will bring benefit to all who depend on it."

The book reflects the sense of urgency about the need for public action which all serious students of the problem of adequate support for higher education now feel. An oversimplified debate about "federal aid" to higher education is really no longer relevant. "What is needed from the government is a point of view toward higher education that includes an end to the notion that institutions of higher education are self-regulating, self-feeding production machines that can be called on indiscriminately to produce goods and services without damage to the mechanism."

Events do not move themselves, however, as the book emphasizes, and both the government and higher education have a responsibility to deal with the "complicated and sensitive" process of policy making at the national level more intelligently than in the past.

The authors state in the Preface that "The Federal Interest in Higher Education" represents "an early exploration of a subject as uncharted as it is vast." The interval between the beginning of a sustained federal policy for higher education and its crystallization in adequate form may be longer than the public interest requires—but the chart lines delineated by Babbidge and Rosenzweig will be useful guides for a considerable period.

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